

In re Patent Application of:
HARRINGTON ET AL.
Serial No. 10/023,481
Filing Date: December 17, 2001

In the Claims:

1. (ORIGINAL) A wireless local area network system comprising:

a plurality of access point stations at known locations that receive and transmit communication signals within the wireless local area network;

a mobile access point station that receives and transmits communication signals within the wireless local area network; and

a location processor operatively connected to each of the access point stations and operative to process communication signals transmitted from the mobile access point base station and received in access point stations and determining which communication signals are first-to-arrive signals based on a common timing signal and conducting differentiation of the first-to-arrive signals to locate the mobile access point station.

2. (ORIGINAL) A system according to Claim 1, wherein each access point station includes a plurality of mutually diverse antennas for detecting communication signals used in locating the mobile access point station.

3. (ORIGINAL) A system according to Claim 1, wherein said location processor further comprises a matched filter correlator.

4. (ORIGINAL) A system according to Claim 3, wherein said matched filter correlator further comprises

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matched filter banks having parallel correlators that correlate a received communications signal with time offset versions of a reference spreading code.

5. (ORIGINAL) A system according to Claim 1, wherein said location processor further comprises a plurality of processors for distributing processing capability.

6. (ORIGINAL) A system according to Claim 1, and further comprising a wired local area network operatively connected to an access point station through which a common timing signal is received and transmitted to other access point stations.

7. (ORIGINAL) A system according to Claim 1, wherein the common timing signal comprises a wireless timing signal broadcast to each of said access point stations.

8. (ORIGINAL) A system according to Claim 1, wherein an access point station is operative for generating the common timing signal.

9. (ORIGINAL) A system according to Claim 1, wherein at least three access point stations are used for determining the location of the mobile access point station.

10. (ORIGINAL) A wireless local area network system comprising:

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a plurality of access point stations at known locations that receive and transmit communication signals within the wireless local area network;

a mobile access point station that receives and transmits communication signals within the wireless local area network;

a location processor operatively connected to each of the access point stations and operative to process communication signals transmitted from the mobile access point station and received in access point stations and determining which communication signals are first-to-arrive signals based on a common timing signal and conducting differentiation of the first-to-arrive signals to locate the mobile access point station; and

a network management station (NMS) operative under the Simple Network Management Protocol (SMNP) and a management information base (MIB) operative with the network management station and having deposited characteristics for objects corresponding to access point stations and other devices associated the wireless local area network system for allowing management control by the network management station.

11. (ORIGINAL) A system according to Claim 10, and further comprising a server for receiving data from the network management station and communicating management data about the wireless local area network to clients that access the server.

12. (ORIGINAL) A system according to Claim 11, wherein said server comprises an HTTP server for accessing management data via the internet.

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13. (ORIGINAL) A system according to Claim 10, wherein each access point station includes a plurality of mutually diverse antennas for detecting communication signals used in locating the mobile access point station.

14. (ORIGINAL) A system according to Claim 10, wherein said location processor further comprises a matched filter correlator.

15. (ORIGINAL) A system according to Claim 14, wherein said matched filter correlator further comprises matched filter banks having parallel correlators that correlate a received communications signal with time offset versions of a reference spreading code.

16. (ORIGINAL) A system according to Claim 10, wherein said location processor further comprises a plurality of processors for distributing processing capability.

17. (ORIGINAL) A system according to Claim 10, and further comprising a wired local area network operatively connected to an access point station through which a common timing signal is received and transmitted to other access point stations.

18. (ORIGINAL) A system according to Claim 10, wherein said common timing signal comprises a wireless timing signal broadcast to each of said access point stations.

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19. (ORIGINAL) A system according to Claim 10, wherein an access point station is operative for generating the common timing signal.

20. (ORIGINAL) A method of locating a mobile access point station used in a wireless local area network comprising the steps of:

receiving and transmitting communication signals among access point stations of the wireless local area network that are located at known positions; and

processing communication signals received from a mobile access point station within a location processor operatively connected to each access point station and determining which communication signals are first-to-arrive signals based on a common timing signal and conducting differentiation of the first-to-arrive signals to locate the mobile access point station.

21. (ORIGINAL) A method according to Claim 20, and further comprising the step of receiving the communication signals at each access point station within mutually diverse antennas.

22. (ORIGINAL) A method according to Claim 20, and further comprising the step of processing the communication signals within a matched filter processor of the location processor.

23. (ORIGINAL) A method according to Claim 22, and further comprising the step of processing within matched filter

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banks having parallel correlators and correlating a received communication signal with time offset versions of a reference spreading code.

24. (ORIGINAL) A method according to Claim 23, and further comprising the step of distributing processing capability among a plurality of processors.

25. (ORIGINAL) A method according to Claim 20, and further comprising the step of receiving a timing signal into an access point station through a wired local area network that is operatively connected to the access point station.

26. (ORIGINAL) A method according to Claim 20, and further comprising the step of broadcasting a wireless timing signal to each of the access point stations.

27. (ORIGINAL) A method according to Claim 20, and further comprising the step of generating a common timing signal within an access point station and wirelessly transmitting the common timing signal to any other access point stations within the wireless local area network.

28. (ORIGINAL) A method of locating a mobile access point station used in a wireless local area network comprising the steps of:

receiving and transmitting communication signals among access point stations of the wireless local area network that are located at known positions;

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processing communication signals received from a mobile access point station within a location processor operatively connected to each access point station and determining which communication signals are first-to-arrive signals based on a common timing signal and conducting differentiation of the first-to-arrive signals to locate the mobile access point station; and

managing the wireless local area network using a network management station (NMS) operative under the Simple Network Management Protocol (SMNP) and a management information base (MIB) operative with the network management station and having deposited characteristics for objects corresponding to access point stations and other devices associated with the wireless local area network system.

29. (ORIGINAL) A method according to Claim 28, and further comprising the step of transmitting data from a server that has received data from the network management station to a client accessing the server.

30. (ORIGINAL) A method according to Claim 29, wherein the server comprises a HTTP server for communicating over the internet.

31. (ORIGINAL) A method according to Claim 28, and further comprising the step of receiving the communication signals at each access point station within mutually diverse antennas.

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32. (ORIGINAL) A method according to Claim 28, and further comprising the step of processing the communication signals within a matched filter processor of the location processor.

33. (ORIGINAL) A method according to Claim 32, and further comprising the step of processing within matched filter banks having parallel correlators and correlating a received communication signal with time offset versions of a reference spreading code.

34. (ORIGINAL) A method according to Claim 28, and further comprising the step of distributing processing capability among a plurality of processors.

35. (ORIGINAL) A method according to Claim 28, and further comprising the step of receiving a timing signal into an access point station through a wired local area network that is operatively connected to the access point station for transmission to other access point stations.

36. (ORIGINAL) A method according to Claim 28, and further comprising the step of broadcasting a wireless timing signal to the access point stations.

37. (ORIGINAL) A method according to Claim 28, and further comprising the step of generating a common timing signal within an access point station and wirelessly transmitting the common timing signal to other access point stations within the wireless local area network.